Data Management Strategies in Complex Investigations

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Objectives

- Ways to manage data during a complex investigation
  - Including data collection tools
- How to prioritize contacts
- How media and politics can impact an investigation
- Lessons learned

Investigation Scenario

- An inmate informs guards during booking process that he has TB
  - Chest X-ray & sputum confirm illness
- Put in a single, isolation cell (with shared ventilation)
- Held in cell approximately 15 hours and then held in outside area until hospitalized
- During arrest, at least 10 law enforcement officials had to be used to subdue the patient
- Jail has approximately 240 inmates and 50 staff who were in building with inmate

TB in Correctional Facilities

- According to CDC 4-6% of TB cases reported in US occur among people incarcerated at time of diagnosis
- Persons incarcerated or recently incarcerated have higher rates of HIV and Hepatitis C than the general population
- In Boyd County investigation, 2.3% of all inmates were a known positive
  - All chest x-rays were negative

Investigation Data

- Investigations in Correctional Facilities can generate a lot of data
- Proper management of data from the onset is critical
  - Hard to go back and collect information
  - Inmates are transferred or released
- No “one size fits all” method to use

Data Management Plan

- 5 key questions to ask at the start of any investigation
  - What is the illness/symptoms?
  - How is it spread?
  - What type of facility?
  - How many people are possibly exposed?
  - Who needs to be contacted?
    - Order of importance
    - Update list every 6 months

Data Management Issues

- Keep confidential data confidential
  - May be difficult when dealing with multiple agencies
  - May be difficult due to large quantity of data
- Space to store data and investigation information
- Sharing data between investigation team members

Data Collection Spreadsheets

- Easy access to data and statistics on data
  - Easy way to keep track of aggregate numbers
- A lot of work to input information and keep updated
  - Situation is very fluid in first few days
- Helpful for reports and media inquires
  - Easy to find number of TSTs completed, etc

	A	B	C	D	E	AW	AX	AY	AZ	BA	BB
4	Populations at Risk	Number of Persons in Each Group, All Ages	Number of Persons in Each Group, Aged 5 Yrs and Older	Number of Persons Seen By Health Dept / Provider	Number of Persons Remaining to be Evaluated by the Health Dept / Provider	Number of Persons with Suspected TB who have Positive AFB Sputum Smear Test Results and Negative NAA or GeneXpert Test Results	Number of Persons with Suspected TB who have Positive AFB Sputum Smear Test Results and No Results from NAA or GeneXpert Tests	Number of Persons with Suspected TB who have Negative AFB Sputum Smear Test Results and Positive NAA or GeneXpert Test Results [Special Provider Order]	Number of Persons with Suspected TB who have Negative AFB Sputum Smear Test Results and Negative NAA or GeneXpert Test Results [Special Provider Order]	Number of Persons with Newly Diagnosed Active TB (Confirmed TB Case)	Number of Persons with Newly Suspected Active TB
5	Roommates and Sick Inmates										
6	In Custody	210	210	210	0						
7	Other Agency				0						
8	Not in Custody				0						
9	Close Contact Corrections Staff/Personnel	41	41	41	0						
10	BCDC Contracted Medical Staff	2	2	2	0						
11	Family	8	8	8	0						
12	Law Enforcement Personnel	11	11	11	0						
13	Total	272	272	272	0						
14											

TST Given September 21-30, 2012

	BCDC			Family/Friends			
	Inmates	Staff	Law Enforcement	Kentucky	Ohio	Courthouse Employees	**TOTAL**
Total Given (1st)	218	42	11	28		29	**328**
0mm	201	37	11	25		29	**303**
1-4mm	5	0	0	2		0	**7**
5mm +	4	0	0	1		0	**5**
10mm +	1	0	0	0		0	**1**
Not Read	7	5	0	0		0	**12**
Known + CXR	5	1	0	0		0	**6**
CXR (+) Results	0	0	0	0		0	**0**

Test Results (Percentages) September 2012

	BCDC			Family/Friends			
	Inmates	Staff	Law Enforcement	Kentucky	Ohio	Courthouse Employees	**TOTAL**
0mm	92.2%	88.1%	100.0%	89.3%		100.0%	**92.4%**
1-4mm	2.3%	0.0%	0.0%	7.1%		0.0%	**2.1%**
5mm +	1.8%	0.0%	0.0%	3.6%		0.0%	**1.5%**
10mm +	0.5%	0.0%	0.0%	0.0%		0.0%	**0.3%**
Not Read	3.2%	11.9%	0.0%	0.0%		0.0%	**3.7%**
Known + CXR	2.3%	2.4%	0.0%	0.0%		0.0%	**1.8%**
CXR (+) Results	0.0%	0.0%	0.0%	0.0%		0.0%	**0.0%**

Paper, Paper, Paper

- Used TB-2 (12/2010) form to track contact data
  - Very labor intensive to add every contact name and information
  - Useful for completing spreadsheet and other statistics on investigation
- Used TB Risk Assessment Form for TB history
  - Difficult to get accurate data from inmates
  - Obtained list from jail medical staff on all inmates with chronic conditions
- Created a TST consent form for data collection
  - Used form developed for Hepatitis A outbreak (2010)
  - Allowed for easy collection of data for spreadsheet and TB-2 form

TB Risk Assessment Form

___None (Skip to Section II, "Screen for Infection Risk")
___Cough for > 3 weeks Productive? ____Yes ____No
Hemoptysis? ____Yes ____No

___Fever, unexplained
___Unexplained weight loss
___Poor appetite
___Night sweats
___Fatigue

Evaluate these symptoms in context

Pediatric Patients (≤6 yrs of age)
___Wheezing
___Failure to thrive
___Decreased activity, playfulness, and/or energy
Lymph node swelling

II. Screen for TB Infection Risk *(Check all that apply)*

Individuals with an increased risk for acquiring latent TB infection (LTBI) or for progressing to active disease once infected should have a TST. Screening for persons with a history of LTBI should be individualized.

A. Assess Risk for Acquiring LTBI

___Person is a current close contact of a person known or suspected to have TB disease
___Person has lived in a country - for 3 months or more - where TB is common, and has been in the US for 5 or fewer years
___Person is a resident or an employee of a high TB risk congregate setting
___Person is a health care worker who serves high-risk clients
___Person is medically underserved
___Person has been homeless within the last two years
___Person is an infant, a child or an adolescent exposed to an adult(s) in high-risk categories
___Person injects illicit drugs or uses crack cocaine
___Person is a member of a group identified by the local health department to be at an increased risk for TB infection
___Person needs baseline/annual screening approved by health dept.

B. Assess Risk for Developing TB Disease if Infected

___Person is HIV positive
___Person has risk for HIV infection, but HIV status is unknown
___Person was recently infected with *Mycobacterium tuberculosis*
___Person has certain clinical conditions, placing them at higher risk for TB disease
___Person injects illicit drugs (determine HIV status)
___Person has a history of inadequately treated TB
___Person is >10% below ideal body weight
___Person is on immunosuppressive therapy (this includes treatment for rheumatoid arthritis with drugs such as Humira, Remicaid, etc.)

___Previous Treatment for LTBI and/or TB disease
___No risk factors for TB infection
___Risk(s) for infection and/or progression to disease
___Possible TB suspect
___Previous positive TST, no prior treatment

IV. Action(s) *(Check all that apply)*

___Issued screening letter ___Issued sputum containers
___Referred for CXR ___Other_____
_____
___Referred for medical evaluation
___Administered the Mantoux TB Skin Test

Screener's signature and title:_____

Date: ___/___/___ Phone number:_____

Primary care provider:_____

Primary care provider phone number:_____

Comments:_____

_____

_____

_____

_____

_____

IMPORTANT:
A decision to test is a decision to treat. Given the high rates of false positive TB skin test results, the TB Control Program discourages administration of the Mantoux TST to persons who are at a low risk for risk for TB infection.

Ashland-Boyd County Health Department
2916 Holt Street Ashland, Kentucky 41101

TUBERCULOSIS SKIN TEST ADMINISTRATION RECORD

PEF label

DOCUMENT#: _____

HID/LOC/SITE: _____

NAME: _____ **SOCIAL SECURITY#:** _____

ADDRESS: _____
STREET *CITY* *COUNTY* *STATE* *ZIP*

BIRTHDATE: _____/_____/_____ **PHONE NUMBER**_____
MONTH DAY YEAR

RACE: (Check ONE or MORE) ☐ **(W)** White ☐ **(B)** Black or African American ☐ **(N)** American Indian or Alaska Native*
☐ **(A)** Asian ☐ **(H)** Native Hawaiian or Other Pacific Islander **ETHNICITY:** Hispanic or Latino ☐ Yes **or** ☐ No

SEX: (Check ONE) ☐ Male ☐ Female **LOCATION: Boyd Co. Detention Center, Catlettsburg, KY.**

EXPOSURE: _____ **PRIMARY** _____**SECONDARY**

The health department may keep this record in a medical file. They will record the administration and results of the TB skin test. Documentation will include date given, skin test manufacturer, special lot number, the injection site, the signature and title of the person who gave the skin test, and the location where the vaccine was given.

"I have read or have had explained to me the information sheet: (Check ONE)
( ) ***Tuberculin Skin Test Information***

I have had a chance to ask questions that were answered to my satisfaction. I believe I understand the benefits and risks of TB Skin testing (TST) and ask that the TST be given to me or to the person named above for whom I am authorized to make this request.

X_____ **DATE:** _____
Signature of person to receive vaccine or person authorized to make the request (parent or legal guardian)

FOR HEALTH DEPARTMENT USE ONLY

Paper, Paper, Paper

- Kept TST consent forms in 3-ring binder for easy access during readings & data analysis
  - Inmates arranged by Cell and then Alphabetically
  - Tabs for Law Enforcement, Friends/Family, Corrections Employees

- Binder also included inmate & friends/family lists

Complex Contact Tracing

- May not be able to find all contacts in a complex investigation
  - Substance Abuse Issues
  - Lost to Follow-Up
  - Poor historians
- Difficult to keep track of connections to case
  - Hard to determine if Primary or Secondary
- Fear of TB may cause contacts to over-estimate risk
  - TB assessment form is helpful for this issue

Prioritizing Contacts

- Stratify identified contacts by their duration and intensity of exposure to source patient (CDC)
  - Classify HIV-infected & other immunosuppressed contacts as high priority regardless of duration and intensity of exposure (CDC)
- May be more difficult in complex investigations where case had many close contacts
- May be unable to find all primary contacts
  - Advise local infectious disease physician(s) & hospital infection control to watch for patients who were contacts

Media & Political Considerations

- Investigations in certain settings will always trigger media interest
  - Correctional Facilities
  - Schools/Childcare
  - Hospitals
  - Long Term Care Facilities

- Have data available for media releases or inquires as quickly as possible
  - Lowers public panic
  - Builds trust between agency & media
  - Slows rumor spread

Media & Political Considerations

- Elected officials need access to data to make informed decisions and to alleviate public concerns
  - Data should be kept simple and concise
  - Take care to protect confidential information
- National/State statistics can be useful tools to explain risk to media and elected officials
  - Use trusted sources such as CDC & KDPH

Lessons Learned

- Communication is key
  - Don't forget community partners (not directly involved)
  - Have systems in place for rapid information sharing among community partners and media
- Educate, Educate, Educate
  - High turnover rates at hospitals & correctional facilities can contribute to misinformation and other issues
  - Educate community partners including public safety partners on infection control measures
  - Educate on after-hours contact procedures & when to notify LHD

HIGH PRIORTY
(contact health dept. immediately)

If patient reports or you suspect:
Tuberculosis (TB)

Possible Bioterrorism Illness or Exposure (smallpox, anthrax)

Any unusual illness/symptoms

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During Normal business hours (M-F, 8-4:30)
Call **329-9444** Press 0 and ask for Erin, Kristy or Maria

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After Hours contact Boyd County 911 at **329-2191** and ask for Public Health to be contacted

MEDIUM PRIORTY
(contact health dept. as soon as possible)

If you have **5** or more cases of GI illness(vomiting, diarrhea), flu-like illness or rash illness

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Monday-Friday Contact:
Erin 324-7181 ext 2262
Kristy 329-9444 ext 2232
Leave a voicemail if after hours

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If on a weekend, contact Boyd County 911 at 329-2191 and ask for Public Health to be contacted

Lessons Learned

- Use Regional Epidemiologist for data collection assistance
  - Not all assist with TB but all can assist with data collection/analysis
- Train PIO on handling outbreaks in congregational settings
  - Schools, Correctional Facilities, Long Term Care Facilities, Childcare Facilities and Hospitals

Conclusion

- Develop a data management plan in place BEFORE an outbreak/large contact investigation occurs
- Decide what data collection strategies work for your investigation team
- Develop relationships with community partners and media outlets

Contact Information

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